UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/804,987	03/13/2001	Christian Waeber	M0765/7035 (ERG/MAT)	9309

7590 03/11/2003

Edward R. Gates
c/o Wolf, Greenfield & Sacks, P.C.
Federal Reserve Plaza
600 Atlantic Avenue
Boston, MA 02210-2211

EXAMINER
LI, RUIXIANG

ART UNIT	PAPER NUMBER
1646	

DATE MAILED: 03/11/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application N . 09/804,987	Applicant(s) WAEBER ET AL.
	Examiner Ruixiang Li	Art Unit 1646

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *31 December 2002* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *34,43,56 and 86-114* is/are pending in the application.

4a) Of the above claim(s) *86,87,92,94,95,100,106,107 and 112* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *34,43,56,88-91,93,96-99,101-105,108-111,113 and 114* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *13 March 2001* is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application)

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *4,7* .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other:

DETAILED ACTION

Election/Restrictions

1. Applicants' election with traverse of Group II, claims 34, 43, 56 (all in part), 88-91, 93 (in part), 96-99, 101-105 (in part), 108-111, 113 (in part), 114 (in part), drawn to a method for treating a subject having, or at risk of having, a disorder which can be treated by increased vasodilation or inhibition of vasoconstriction comprising administering to a subject in need of such treatment an EDG receptor inhibitor, in Paper NO. 13 filed on 12/31/2002 is acknowledged. Applicants' election of species, an EDG-3 receptor inhibitor (for an EDG receptor inhibitor) and a neuroprotective agent (for a second agent) is also acknowledged.

The traverse is on the ground that a search and examination of all the pending claims would not require an undue burden of searching. This has been fully considered but is not deemed to be persuasive because Groups I-III are three distinct inventions, which require separate search and examination and search and examination of all three groups of inventions constitutes an undue search burden on the office.

The requirement is still deemed proper and is therefore made FINAL.

2. Applicants' amendment in Paper No. 10 filed on 08/21/2002 has been entered in full. Claims 1-12, 23, 66, 67, 69, 70, and 78 have been canceled. Newly added claims 87-115 have been renumbered as 86-114, respectively (Rule 1.126), because the newly

added claims should be numbered consecutively following the last claim 85. Thus, claims 34, 43, 56, and 86-114 are currently pending. Claims 34, 43, 56, 88-91, 93, 96-99, 101-105, 108-111, 113, and 114 are under consideration. All other claims are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Priority

3. Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §119(e) to a provisional application, 60/188,859 filed on March 13, 2000.

Drawings

4. The drawings filed on March 13, 2001 are objected because of various defects in the drawings (see attached Form PTO-948 for details).

Claim Rejections—35 USC § 112, 1st paragraph

5. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

6. Claims 34, 43, 56, 88-91, 93, 96-99, 101-105, 108-111, 113, and 114 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for a method for treating a subject having, or at risk of having a disorder which can be treated by increased vasodilation or inhibition of vasoconstriction of ***cerebral artery***

blood flow comprising administering to a subject ***an EDG-3 receptor inhibitor (sphingosine or suramin)***, does not reasonably provide enablement for the whole scope of the claimed invention (see below). The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to use the invention commensurate in scope with these claims.

The factors that are considered when determining whether a disclosure satisfies enablement requirement include: (i) the quantity of experimentation necessary; (ii) the amount of direction or guidance presented; (iii) the existence of working examples; (iv) the nature of the invention; (v) the state of the prior art; (vi) the relative skill of those in the art; (vii) the predictability or unpredictability of the art; and (viii) the breadth of the claims. *Ex Parte Forman*, 230 USPQ 546 (Bd Pat. App. & Int. 1986); *In re Wands*, 858 F. 2d 731, 8 USPQ 2d 1400 (Fed. Cir. 1988).

The three independent claims, 34, 43, and 56, are drawn to a method for treating a subject having, or at risk of having a disorder which can be treated by increased vasodilationor inhibiton of vasoconstriction, a method for increasing arterial blood flow in a subject who would benefit from increased arterial blood flow, and a method for inhibiting vasoconstriction in a subject who would benefit from inhibited vasoconstriction, respectively. Such method comprises administering an agent that downregulates EDG receptor signalling to treat the disorder, to increase arterial blood flow, or to inhibit vasoconstriction. Therefore, the claims encompass a method of increasing vasodilation or inhibition of vasoconstriction in ***any arteries*** comprising ***any agents that downregulate any EDG receptor signalling***.

However, the instant disclosure only discloses that EDG-3 receptor inhibitors, including sphingosine and suramin, downregulates EDG-3 receptor signalling and antagonizes sphingosine-1-phosphate-induced vasoconstriction response in cerebral blood vessels (See, e.g., Examples, in particular pages 51 to 54). The instant disclosure clearly teach that it is EDG-3 receptor that mediates the vasoconstrictive response to sphingosine-1-phosphate in cerebral blood vessels, not any other EDG receptors (1st paragraph and 2end paragraph of page 53), not in other arteries, such as peripheral arteries (bottom of page 2; lines 13-14 of page 54).

The prior art indicates that EDG receptors have differential pharmacological properties and signalling characteristics (see, e.g., IDS, Ancellin et al. J. Biol. Chem. 274;18997-9002, 1999; Okamoto et al. Biochem. Biophys. Res. Commun. 260:203-208, 1999; Windh et al. J. Biol. Chem. 274:27351-27358, 1999). LPA bind to EDG-2 and EDG-4, whereas sphingosine-1-phosphate binds to EDG-1, EDG3, and EDG-5 (IDS, Goetzl et al. Adv. Exp. Med. Boil. 469:259-264, 1999). Thus, one skilled in the art would expect other EDG receptors to function differently from EDG-3 receptor.

Therefore, the specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to use the invention commensurate in scope with these claims.

Claim Rejections—35 USC § 112, 1st paragraph

7. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the

art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

8. Claim 104 is rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor, at the time the application was filed, had possession of the claimed invention.

Claim 104 recites a neuroprotective agent. The claim does not require that the agent possesses any specific activity, nor any particular structure, or other disclosed distinguishing feature. Thus, the scope of the claim is so broad that it encompasses any agents as long as they have activities that protect the nerve system, and as well as any agents to be discovered in the future.

To provide adequate written description and evidence of possession of a claimed genus, the specification must provide sufficient distinguishing identifying characteristics of the genus. The factors to be considered include disclosure of complete or partial structure, physical and/or chemical properties, functional characteristics, structure/function correlation, methods of making the claimed product, or any combination thereof. In the instant case, the only factor present in the claim is a recitation of the general properties of the agents, "neuroprotective". There are not examples of such recited agents. There is no description of the specific structural and functional requirement for the agents. Accordingly, in the absence of sufficient recitation of distinguishing identifying characteristics, the specification does not provide adequate written description of the claimed agents.

Claim Rejections—35 USC § 112, 2nd paragraph

9. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

10. Claims 104 and 105 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 104 is indefinite because it recites the term "neuroprotective". Since neither the art nor the specification provides an unambiguous definition for the term, the claim is indefinite.

Claim 105 is indefinite because it recites the term "TPA". For clarity, it is suggested that the term be spelled out in the claim.

Claim Objections—Minor Informalities

11. Claims 90, 97, 104, and 109 are objected to because they recite unelected EDG receptor inhibitors. Appropriate correction is required.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ruixiang Li whose telephone number is (703) 306-0282. The examiner can normally be reached on Monday-Friday, 8:30 am-5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Yvonne Eyler, can be reached on (703) 308-6564. The fax phone number for this Group is (703) 305-3014 or (703) 308-4242.

Communications via Internet e-mail regarding this application, other than those under 35 U.S.C. 132 or which otherwise require a signature, may be used by the applicant and should be addressed to [yvonne.eyler@uspto.gov].

All Internet e-mail communications will be made of record in the application file. PTO employees do not engage in Internet communications where there exists a possibility that sensitive information could be identified or exchanged unless the record includes a properly signed express waiver of the confidentiality requirements of 35 U.S.C. 122. This is more clearly set forth in the Interim Internet Usage Policy published in the Official Gazette of the Patent and Trademark on February 25, 1997 at 1195 OG 89.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0196.

Ruixiang Li
Examiner
February 24, 2003

YVONNE EYLER, PH.D
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1600